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EXAMINER

EVANS, ROBIN OCTAVIA

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3752

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Please find below and/or attached an Office communication concerning this application or proceeding.



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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Paper No. 15

Application Number: 09/733,041  
Filing Date: December 11, 2000  
Appellant(s): BENOIST, JEAN FRANCOIS

**MAILED**  
**OCT 02 2002**  
**GROUP 3700**

William P. Berridge  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed May 15, 2002 as Paper No. 12.

**(1) *Real Party in Interest***

A statement identifying the real party in interest is contained in the brief.

Art Unit: 3752

**(2) *Related Appeals and Interferences***

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

**(3) *Status of Claims***

The statement of the status of the claims contained in the brief is correct.

**(4) *Status of Amendments After Final***

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) *Summary of Invention***

The summary of invention contained in the brief is correct.

**(6) *Issues***

The appellant's statement of the issues in the brief is correct.

**(7) *Grouping of Claims***

Appellant's brief includes a statement that claims 1-39 do not stand or fall together and provides reasons as set forth in 37 CFR 1.192(c)(7) and (c)(8).

**(8) *Claims Appealed***

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(9) *Prior Art of Record***

5,711,488	LUND	1-1998
4,071,196	BURKE et al.	1-1978
4,322,037	HEEB et al.	3-1982

Art Unit: 3752

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 15 and 39 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15 recites the broad recitation “propellant gas”, and the claim also recites, “constituted by a non-liquefied compressed gas” which is the narrower statement of the range/limitation.

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired.

In claim 39 it is unclear if the limitation of compressed air is an additional element in the receptacle or if the claim intends to further limit the propellant gas recited in claim 15.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 5, 7, 10-12, 23, 33 and 34 stand rejected under 35 U.S.C. 102(b) as being anticipated by Lund.

Art Unit: 3752

Lund shows a dispensing head with a nozzle having a swirl chamber 42 with a chamber diameter CD in the range of .05 mm to 1.5mm, discharge orifice 42 with a diameter OD of about .35 mm, center post 26 and vanes 48 having an individual exit area (EA) in the range of .02 mm to .07 mm. The values disclosed in Lund's device can be used to meet the ratio limitations as recited in the claims. For example, using  $EA = .02$ ,  $CD = D_s = 1.5$ , and  $OD = d_o = .5$ , the ratios are determined as  $Ap/A_o = .415$  (which is less than .5) and  $Ap/D_s.d_o = .076$  (which is less than .2). It should be noted that  $Ap = EA$  times the number of vanes = .04 since Lund discloses in column 4, lines 43-46 the number of vanes being at least two. Lund teaches all of the necessary variables to achieve the outcome of the ratio, the presentation of those variable can be inherently expressed, as a ratio as done above and if done would meet the recited range of the ratio.

As to claim 34 and the limitation that " $D_s$  is close to 1mm", since "close to" is a relative term, it is deemed that Lund discloses a value of  $D_s$  is close to 1 mm.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 4, 6, 8, 9 and 24-32 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Lund.

Lund's atomizing device shows all of the claimed limitations including the swirl chamber having a length H, as shown in figure 1, but Lund does not disclose the ranges for the length of the swirl chamber. Lund does however disclose that the EA (exit area) depends on the length of

Art Unit: 3752

the swirl chamber (see column 5, lines 5-20) and Lund further states that the EA is one of the variables that is critical in achieving a desired spray result. Therefore it is deemed that the length of the swirl chamber will be chosen to achieve the desired results wanted by the user, and it would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the length of the swirl chamber in the claimed range of .1 to .2 mm so as to be able to achieve a desired result.

As to claims 2, 4, 6 and 25-29 and the limitations of the ratio  $A_p/A_o$  being in a range that is less than or equal to .4, the ratio of  $A_p/(D_s \cdot d_o)$  that lies in the range 0.1 to 0.15 and the ratio of  $L_s/D_s$  being in a range that is less than or equal to 0.25, it is deemed that the ratios will be determined by the user depending on the desired spray wanted since Lund discloses in column 5 that these variables are important in achieving a desired spray. Therefore it would have been obvious to one of ordinary skill in the art to have chosen ratios in the recited claimed ranges to produce a spray having characteristics wanted by the user, since in column 5, lines 47-52, Lund discloses that the exit area, chamber diameter and orifice diameter are important and will be sized depending on the spray characteristics wanted. Lund also discloses in column 7, lines 16-19, that deviation from these values for appropriate different applications and/or dispensing of various liquids should be possible.

As to claims 8 and 32 and the limitation of the size range of the orifice diameter, it is deemed that the orifice diameter will be determined depending on the other nozzle characteristics and the spray desired since Lund discloses that the orifice diameter sizing is important in achieving a desired spray, see column 5, lines 47-52. Lund also discloses in column 7, lines 16-

Art Unit: 3752

19, that deviation from these values for appropriate different applications and/or dispensing of various liquids should be possible.

Claims 13-22 and 35-39 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Lund in view of Heeb et al.

Lund shows all of the claimed limitations but does not show the nozzle in an aerosol receptacle. Heeb et al. shows an aerosol receptacle for spraying deodorant and hair spray whose contents after filling are at a temperature of 20 C and a pressure in the claimed range. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have replaced the manual pump receptacle of Lund's device with an aerosol receptacle like the one shown by Heeb et al. so as to be able to spray a different type of product since there is nothing that precludes this atomizing nozzle on an aerosol container and Lund discloses in column 7 that the structure of the atomizing nozzle is not limited to dispensing any specific product and further discloses that the nozzle may be used in different applications (see column 7, lines 15-19).

As to limitations of the content of the receptacle being cosmetic hair spray or deodorant or the type of propellant gas, it is deemed that the contents of the receptacle will be chose by the user depending on the application of the device since Lund discloses in column 7 that the structure of the atomizing nozzle is not limited to dispensing any specific product and further discloses that the nozzle may be used in different applications and for dispensing various liquids (see column 7, lines 15-19).

Claims 1-39 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Burke et al.

Art Unit: 3752

Burke et al. shows an aerosol receptacle with a dispensing head having a nozzle 36 exit orifice 34, center post 70, swirl chamber 66, and channels 65. Figures 8 and 10 shows an orifice diameter A, chamber diameter D and width of the channels G. Burke does not disclose the ranges of the swirl chamber diameter, exit area of the channels, or orifice diameter. It would have been obvious that one of ordinary skill in the art, depending on the product being sprayed and the pressures and particle size wanted, would determine the diameters of the exit orifice swirl chamber and feed channels employed since Burke discloses that these parameters are important to achieve a desirable spray (see column 1, lines 42-57 and column 3, lines 27-40).

As to claim 14 and the limitation of the type of propellant used in the receptacle, it is deemed that the type of propellant used in the aerosol receptacle will be determined by the user depending on the application the device is used for.

As to limitations of the content of the receptacle being cosmetic hair spray or deodorant, it is deemed that the contents of the receptacle will be chose by the user depending on the application of the device.

As to the limitations of the particle size, flow rate, temperature and pressure of the contents of the receptacle, it is deemed that the particle size, flow rate, pressure and temperature of the contents of the container will be determined depending on the spray desired by the user.

**(11) *Response to Argument***

Applicant's argument that the preferred range indicated by the Lund reference are far away from the recited ranges is noted, however Lund does not disclose that these preferred ranges are the only values that can be used, and further Lund gives other ranges and values that can be used in his disclosed atomizer and it these ranges that can be used to meet the claimed



Art Unit: 3752

limitation of the invention recited. Lund further goes on to point out that the values of the variables will be determined in order to achieve a desired spray. Therefore disclosing a range would allow one using the device to choose a value in the disclosed ranges that would achieve the desired result wanted by the user.

As to applicant's argument that Lund's preferred number of vanes is 3 and there is no express teaching to use the least amount of vanes, although Lund's preferred number of vanes is 3, it is disclosed in column 4, lines 43-46, that in a preferred embodiment that the nozzle insert has at least two vanes. Therefore Lund also discloses using two vanes.

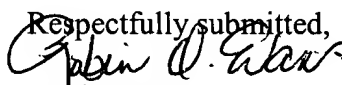
As to applicant's argument that the values have been arbitrarily chosen by the examiner, the values chosen by the examiner were taken from value ranges disclosed in the reference as being useable in the device, Lund teaches these values as part of the disclosed ranges, see the last line of column 2 through column 3, line 8 and column 6, lines 5-15. Lund also discloses, in column 5, lines 47-52, that the exit area of the vanes and the proper sizing of the chamber diameter and orifice diameter are critical to achieving a desired spray characteristic, therefore one of ordinary skill in the art, using Lund's atomizing device, wanting a desired spray characteristic would chose a value from the ranges disclosed by Lund to achieve the desired spray since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

As to the applicant's argument that Burke fails to appreciate the problems overcome by the invention and one of ordinary skill in the art would no have been led to used the recited specific values, Burke discloses, in column 1, lines 42-57 and column 3, lines 27-40 that diameter of the orifice and the diameter of the swirl chamber along with other parameters are

Art Unit: 3752

important to achieve desirable spray characteristics. Therefore one of ordinary skill in the art would have chosen the specific ranges recited in the claimed invention so as to achieve a desirable spray characteristic since it has been held that where the general conditions are disclosed, discovering the optimum or workable ranges involves only routine skill in the art.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,  
  
Robin O. Evans  
Primary Examiner  
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9/30/02

roe  
September 30, 2002

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